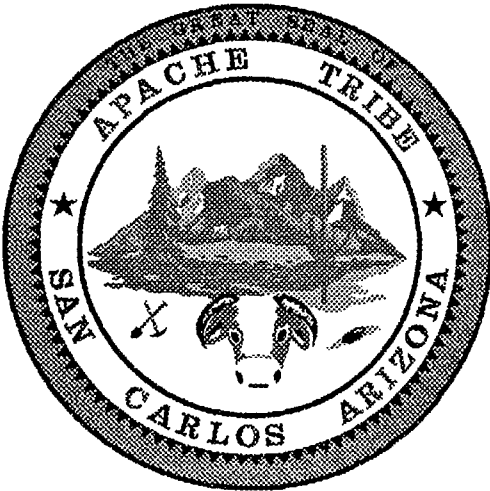




Chapter

**7**

# **ENVIRONMENTAL OVERVIEW**



## OVERVIEW OF THE ENVIRONMENTAL ASSESSMENT

*for the Airport Master Plan  
and Environmental Assessment for the  
San Carlos Apache Airport*

### 7.0 INTRODUCTION

The National Environmental Policy Act of 1969 (NEPA) requires that a statement of environmental impacts of proposed projects be prepared as part of the development process of Federally funded projects. The purpose of environmental documentation under NEPA is to identify, eliminate, or mitigate the potential environmental impacts associated with the proposed future development actions in which the Federal government is providing funding.

An Environmental Assessment under NEPA should not be confused with an Environmental Protection Agency (EPA) Phase I Environmental Assessment. The purpose of a Phase I Environmental Assessment, also known as a Phase I Inspection, is to identify and quantify the existing release, a past release, or a material threat of release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. A Phase I Inspection is not part of this Environmental Assessment Study.

Each Federal agency has developed its own NEPA implementation rules that provide specific procedural guidance. The Federal Aviation Administration (FAA), the lead agency for the Environmental Assessment at the San Carlos Apache Airport, uses the Airport Environmental Handbook (FAA Order 5050.4A) for specifying how to implement NEPA with respect to airport development projects.

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Depending on the nature of the proposed action, NEPA Environmental documentation typically falls into one of three categories:

- **Categorical Exclusion (CE):** This is a finding that a proposed action falls into a category of action that the Federal agency has previously determined (through rule-making) has no or minimal environmental impact. Examples of airport projects which are normally Categorically Excluded include minor runway extensions and pavement resurfacing.
- **Environmental Assessment (EA):** If an action is likely to have some environmental impacts, an EA is typically prepared. The EA will either lead to a Finding of No Significant Impact (FONSI), or if the analysis exceeds thresholds of significance, and significant environmental impacts are expected, a Notice of Intent to Prepare an Environmental Impact Statement (EIS) will be published. Examples of airport projects which normally require an EA include a major runway extension or a new runway construction.
- **Environmental Impact Statement (EIS):** If an action is likely to have significant environmental impacts or major public opposition, an Environmental Impact Statement is normally necessary. An EIS is a more detailed study which includes formal public and agency scoping, a draft EIS, and opportunities for public review and hearings. An example of an airport project which would require an EIS is the construction of a new airport on undeveloped land.

FAA Order 5050.4A, "Airport Environmental Handbook", stipulates those airport actions which normally require an Environmental Impact Statement (EIS), Environmental Assessment (EA), or a Categorical Exclusion (CE).

The proposed development projects at the San Carlos Apache Airport include the following:

- Relocate Runway 9/27 to the south 100 feet.
- Extend Runway 9/27 to the west by approximately 700 feet, to a future runway length of 6,500 feet, and widen to 100 feet.

In accordance with NEPA and FAA Order 5050.4A, the proposed improvements to San Carlos Apache Airport requires an Environmental Assessment. An Environmental Assessment has been accomplished in conjunction with this Airport Master Plan and is detailed in a separate report, "Environmental Assessment Report for the San Carlos Apache Airport". A Finding of No Significant Impact (FONSI) is anticipated pursuant to submission and review of a Section 404 Permit application to the U.S. Army Corps of Engineers. This Chapter summarizes the potential environmental impacts associated with the proposed action as discussed in the Environmental Assessment report. The categories examined in accordance with FAA Order 5050.4A are listed in Table VII-1.

**TABLE VII-1**  
**FAA ORDER 5050.4A SPECIFIC IMPACT CATEGORIES**

Social Impacts	Construction Impacts	Conversion of Farmland
Air Quality	Compatible Land Use	Solid Waste Impacts
Light Emissions	Endangered/Threatened Species	Coastal Barriers
Wetlands	Induced Socioeconomic Impacts	Noise
Wild and Scenic Rivers	Water Quality	Energy Supply and Natural Resources
Historic, Architectural, Archaeological, and Cultural Resources	Impacts to DOT Act, Section 4(f) lands (Public Recreation Areas)	Biotic Communities
Coastal Zone Management	Floodplains	

*Source: FAA Order 5050.4A, Airport Environmental Handbook*

## **7.1 NOISE**

### **7.1.1 General Discussion**

The identification of airport generated noise impacts and implementation of noise abatement measures is a joint responsibility of airport operators and users. FAA Order 5050.4A states that "No noise analysis is needed for proposals involving Design Group I and II airplanes on utility, or transport, type airports whose forecast operations in the period covered by the Environmental Assessment do not exceed 90,000 annual adjusted propeller operations or 700 annual adjusted jet operations . . ." The forecasts of jet aircraft operations for the San Carlos Apache Airport exceed the threshold of 700 annual operations sometime in the five to ten year time frame; therefore, a noise analysis was accomplished to determine the level of noise impact associated with the proposed development project.

The basic measure of noise is the sound pressure level which is recorded in decibels. The important point to understand when considering the impact of noise on communities is that equal levels of sound pressure can be measured for both high and low frequency sounds. Generally, people are less sensitive to sounds of low frequency than they are to high frequencies. An example of this might be the difference between the rumble of automobile traffic on a nearby highway and the high pitched whine of jet aircraft passing overhead. At any location, over a period of time, sound pressure fluctuates considerably between high and low frequencies. Figure 7-1 provides comparative decibel levels for common sounds found indoors and outdoors.

**FIGURE 7-1  
COMPARATIVE NOISE LEVELS**

<b>dB(A)</b>	<b>OVER-ALL LEVEL Sound Pressure Level Approximately 0.0002 Microbar</b>	<b>COMMUNITY (Outdoor)</b>	<b>HOME OR INDUSTRY</b>	<b>LOUDNESS Human Judgement of Different Sound Levels</b>
130	<b>UNCOMFORTABLY LOUD</b>	<i>Military Jet Aircraft Takeoff With After Burner From Aircraft Carrier @ 50'</i>	<i>Oxygen Torch</i>	<i>120 dB(A) 32 Times As Loud</i>
120 110		<i>Turbo-Fan Aircraft @ Takeoff Power @ 200'</i>	<i>Riveting Machine Rock-N-Roll Band</i>	<i>110 dB(A) 16 Times As Loud</i>
100	<b>VERY LOUD</b>	<i>Jet Flyover @ 1,000' Boeing 707, DC-8 @ 6,080' Before Landing Bell J-2A Helicopter @ 100'</i>		<i>100 dB(A) 8 Times As Loud</i>
90		<i>Power Mower Boeing 707, DC-8 @ 6,080' Before Landing Motorcycle @ 25'</i>	<i>Newspaper Press</i>	<i>90 dB(A) 4 Times As Loud</i>
80		<i>Car Wash @ 20' Prop Airplane, Flyover @ 1,000' Diesel Truck, 40 MPH @ 50' Diesel Train, 45 MPH @ 100'</i>	<i>Food Blender Milling Machine Garbage Disposal</i>	<i>80 dB(A) 2 Times As Loud</i>
70	<b>MODERATELY LOUD</b>	<i>High Urban Ambient Sound Passenger Car, 65 MPH @ 25' Freeway @ 50' From Pavement Edge, 10:00 A.M.</i>	<i>Living Room Music TV-Audio, Vacuum Cleaner</i>	<i>70 dB(A)</i>
60		<i>Air Conditioning Unit @ 100'</i>	<i>Cash Register @ 10' Electric Typewriter @ 10' Dishwasher @ 10' Conversation</i>	<i>60 dB(A) 1/2 As Loud</i>
50	<b>QUIET</b>	<i>Large Transformers @ 100'</i>		<i>50 dB(A) 1/4 As Loud</i>
40		<i>Bird Calls Lower Limit Urban Ambient Sound</i>		<i>40 dB(A) 1/8 As Loud</i>
	<b>JUST AUDIBLE</b>	<i>(dB(A) Scale Interrupted)</i>		
10	<b>THRESHOLD OF HEARING</b>			

The presence of various noises is not constant. Particularly in the case of aircraft activity, noise is constantly moving. Consequently, an instantaneous measurement of the noise emitted by an aircraft passing overhead does not depict accurately the noise exposure over a given period of time. Therefore, a statistical approach termed the Equivalent Sound Level (Leq) was formulated to describe the equivalent (steady-state) noise level which, over a specific period of time, would have the same net effect as the time varying level. This approach has been expanded through the use of mathematical simulation models.

### 7.1.2 Noise Contours

For purposes of this study, the FAA approved Integrated Noise Model (INM version 5.1) was used to delineate the affected area and noise intensity. This model, designed for computer application, generates what is known as Day/Night Level (DNL) noise contours. The DNL contours are derived from the basic Leq by mathematically applying a ten decibel weighting to nighttime aircraft noise levels, as noise occurring at night is considered to be more objectionable than daytime noise.

By using the forecasts of aviation activity that were developed in the Airport Master Plan, and shown in Tables VII-2 and VII-3 (excerpted from Chapter IV), three 65 DNL contours were generated using the INM. The area within the 65 DNL is recognized by the FAA as being significantly impacted by noise, and the FAA will mitigate for the area in certain circumstances. Figures 7-2a, 7-2b, and 7-2c depict the 65 DNL contours for existing conditions (1996), future conditions (2006), and ultimate conditions (2016) at the San Carlos Apache Airport. The results of the noise analysis show the 65 DNL contour does not expand outside the airport environment and there are no noise sensitive receptors within the 65 DNL contour (which include schools, residences, hospitals, and churches). Therefore, the surrounding environment will not be significantly impacted by noise due to the proposed development at the San Carlos Apache Airport.

**TABLE VII-2  
FORECAST OF GENERAL AVIATION ACTIVITY  
SAN CARLOS APACHE AIRPORT**

Year	Based Aircraft	Local Operations	Itinerant Operations	Total Operations
1996	23	5,000	4,400	9,400
2001	24	5,200	5,300	10,500
2006	27	5,600	7,400	13,000
2016	30	6,500	10,500	17,000

*Annual operations have been rounded to the nearest hundred.*

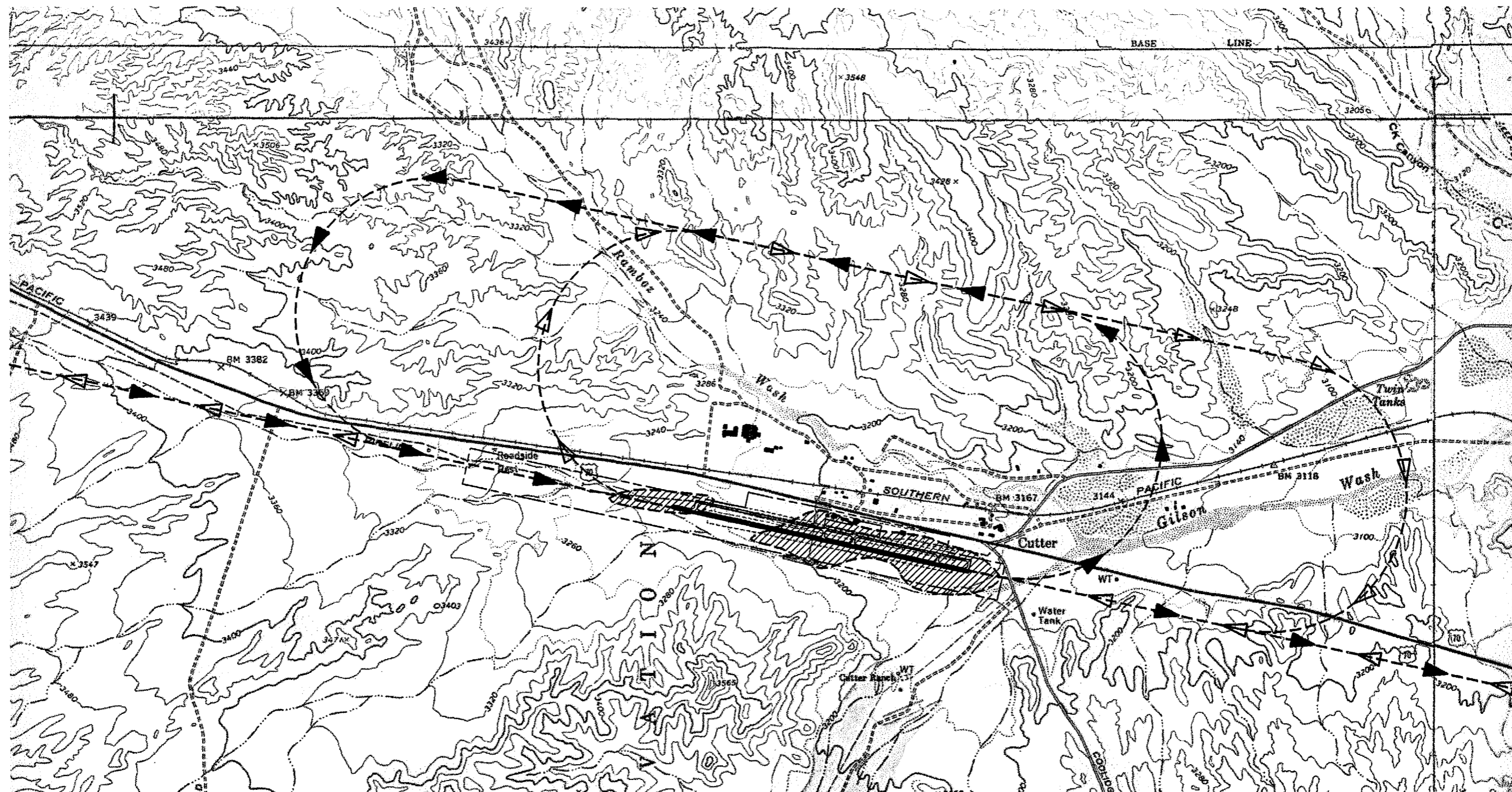
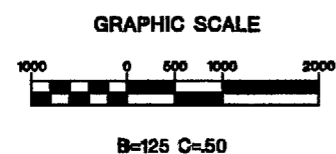


FIG 7-2a



- > RWY 9 FLIGHT PATH
- - -> RWY 27 FLIGHT PATH
- 65 DNL CONTOUR LINE
- PROJECT AREA
- EXISTING RUNWAY
- EXISTING STRUCTURES

## ARMSTRONG CONSULTANTS, INC.

### AIRPORT DESIGN & PLANNING



861 Rood Avenue  
Grand Junction, CO 81501  
ph 970-242-0101 fax 970-241-1769

## SAN CARLOS APACHE AIRPORT ENVIRONMENTAL ASSESSMENT

### EXISTING DEVELOPMENT

SCALE: 1" = 2000'	DATE: 09/05/97
DRAWN: KMS	FILE: FIG7-2a
CHKD: DAC	JOB NO: 965484

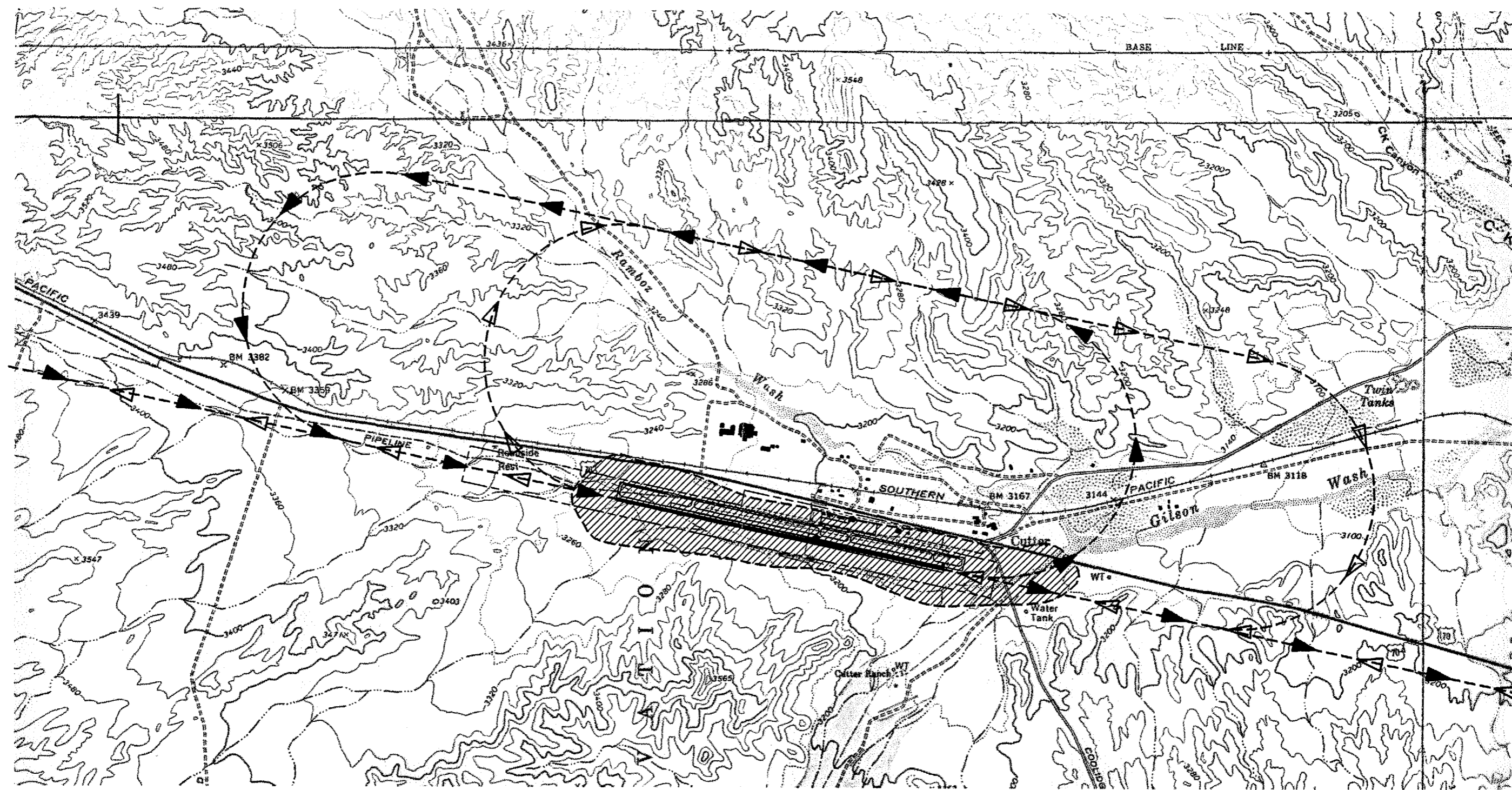
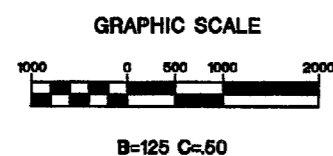


FIG 7-2b



- > RWY 9 FLIGHT PATH
- > RWY 27 FLIGHT PATH
- 65 DNL CONTOUR LINE
- - - - - PROJECT AREA
- FUTURE RUNWAY
- EXISTING STRUCTURES

# **ARMSTRONG CONSULTANTS, INC.** **AIRPORT DESIGN & PLANNING**



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## **SAN CARLOS APACHE AIRPORT ENVIRONMENTAL ASSESSMENT**

### **FUTURE DEVELOPMENT**

SCALE: 1" = 2000'	DATE: 09/05/97
DRAWN: KMS	FILE: FIG7-2b
CHKD: DAC	JOB NO: 965484

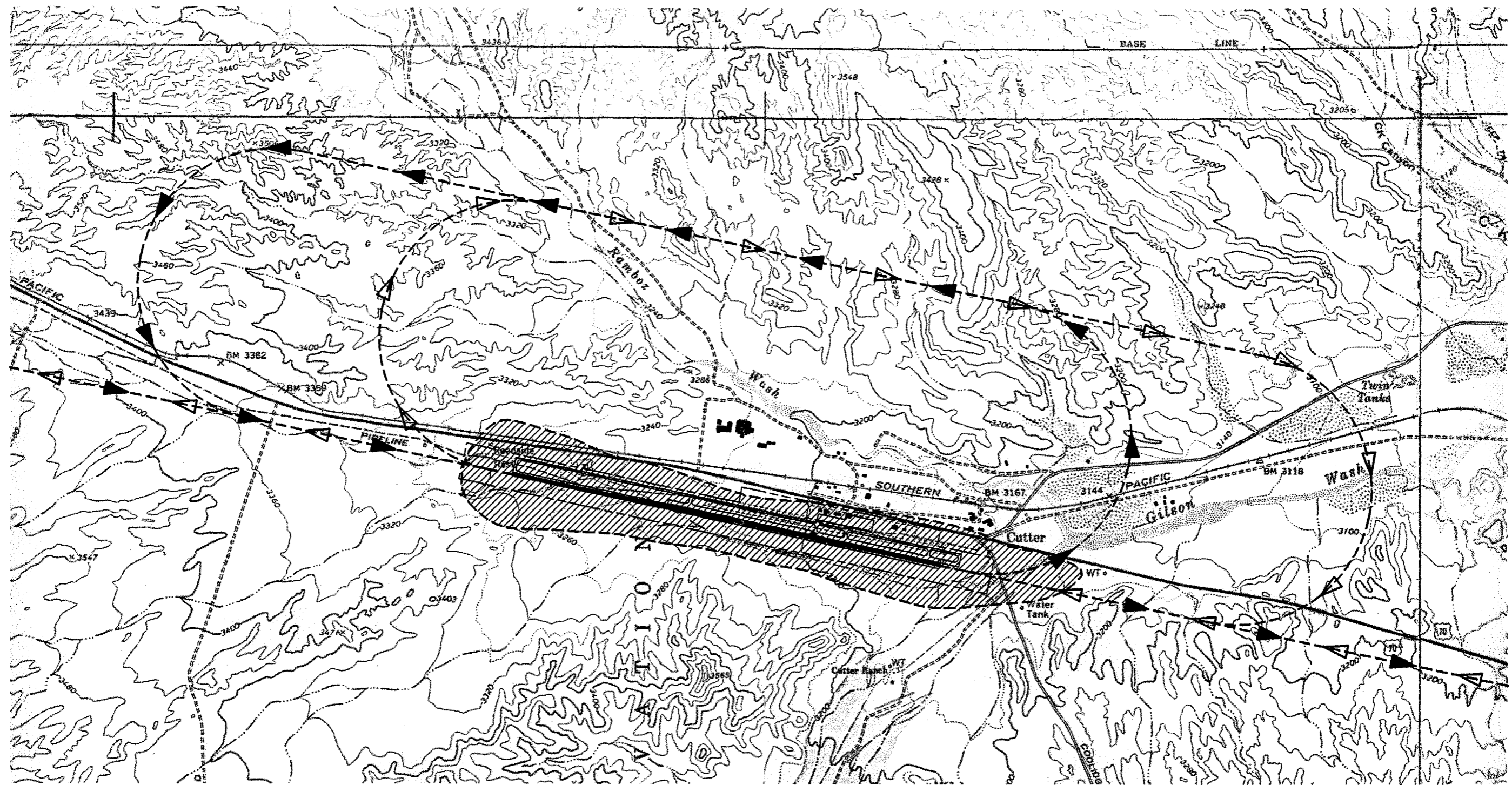
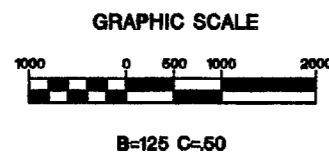


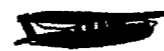
FIG 7-2c



- RWY 9 FLIGHT PATH
- RWY 27 FLIGHT PATH
- 65 DNL CONTOUR LINE
- PROJECT AREA
- ULTIMATE RUNWAY
- EXISTING STRUCTURES

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## SAN CARLOS APACHE AIRPORT ENVIRONMENTAL ASSESSMENT

### ULTIMATE DEVELOPMENT

SCALE: 1" = 2000'	DATE: 09/05/97
DRAWN: KMS	FILE: FIG7-2c
CHKD: DAC	JOB NO: 965484

**TABLE VII-3  
DETAILED FORECASTS BY AIRCRAFT TYPE**

Based Aircraft and Annual Aircraft Operations				
	1996	2001	2006	2016
Single Engine	17	19	20	21
Local	3800	3950	4260	4940
Itinerant	3340	3480	3880	4510
ME Piston	3	3	4	4
Local	570	590	640	740
Itinerant	500	520	580	650
ME Turboprop	0	0	0	1
Local	50	50	60	70
Itinerant	40	400	1000	2460
Business Jet	1	1	1	2
Local	160	170	180	210
Itinerant	140	510	1500	2390
Rotorcraft	2	2	2	2
Local	320	330	350	410
Itinerant	280	290	320	360
Other	0	0	0	0
Local	110	110	120	140
Itinerant	90	100	110	120
<b>TOTAL</b>	<b>9,400</b>	<b>10,500</b>	<b>13,000</b>	<b>17,000</b>

## 7.2 COMPATIBLE LAND USE

Land use compatibility conflicts are a common problem around many airports in the United States, both for large transport airports and smaller general aviation facilities. In urban areas, as well as some rural settings, airport owners find that essential expansion to meet the demands of airport traffic is difficult to achieve due to the nearby development of incompatible land uses.

These incompatible uses typically consist of medium to high density residential areas, built in close proximity to an existing airfield prior to enactment of suitable land use zoning legislation. The residents of these developments, with substantial investments in their homes, may view the airport and its activities as a threat to their health, safety and quality of life.

The issue of aircraft noise is generally the most apparent perceived environmental impact upon the surrounding community. Conflicts may also exist in the protection of runway approach and transitional zones to assure the safety of both the flying public and the adjacent property owners. Adequate land for this use should be either owned in fee or controlled in easements.

The San Carlos Apache Tribe is responsible for designating land uses on the Reservation and the property on which the San Carlos Apache Airport sits has recently been appraised as commercial use land. Property adjacent to the airport on the north side is also commercial use with the Apache Gold Casino under further development in the area. A gravel operation is proposed in an area to the east of the airport. An industrial site, such as a gravel pit is a compatible land use,

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however, height restrictions should be enforced to eliminate any obstructions to navigable air space, and emissions from industrial operations, such as dust and smoke, should be controlled as to not obscure visibility for aircraft operations in the vicinity of the airport. Areas to the south and west of the airport are currently not developed and are used to some extent as grazing land.

The uses of land surrounding the project area are compatible with airport operations. FAA Order 5050.4A requires the inclusion of a Sponsor's Land Use Assurance for jurisdictional areas in the vicinity of the airport. The San Carlos Apache Tribe's assurance is included in Appendix E of the Environmental Assessment Report.

### **7.3 SOCIAL IMPACTS**

Social impacts are those which arise from the disruption of communities, relocation of persons, changes in employment patterns and changes in transportation patterns.

#### **7.3.1 Land Acquisition and Relocations**

The Airport Sponsor is conversant with the Federal requirements (Uniform Relocation and Assistance and Real Property Acquisition Policies Act of 1970, as amended) for acquiring land and providing relocation assistance and payments to displaced households.

The total number of acres to be directly affected by the runway relocation, runway and taxiway extension, and drainage wash channel relocation is approximately 107 acres. All of the land required for the proposed development is owned by the San Carlos Apache Tribe. No land acquisition in fee or easement is required for the project. Additionally, no homes are located within the project area so relocation of individuals will not be necessary.

#### **7.3.2 Transportation and Ground Access**

The major surface transportation routes in the vicinity of the San Carlos Apache Airport are U.S. Highway 60 and State Highway 77, with direct access to the airport from U.S. Highway 70.

The expected increase in aircraft operations at the San Carlos Apache Airport after the proposed development is not expected to cause a significant increase in surface traffic. An increase of approximately six to ten vehicles per day between the airport and the Apache Gold Casino by shuttle vans and limousines is estimated. Development of the airport could potentially initiate interest in commercial or industrial development on or adjacent to the airport, but traffic levels still would not likely increase by significant amounts. Turnout lanes and/or signalization could be

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constructed in the future to ensure traffic flow along U.S. Highway 70 is not congested at the airport entrance.

## **7.4 INDUCED SOCIOECONOMIC IMPACTS**

These secondary or indirect impacts involve major shifts in population, changes in economic climate, or shifts in levels of public service demand. The effects are directly proportional to the scope of the project under consideration.

Induced socioeconomic impacts are usually only associated with major development at large air carrier airports. Examples of development that could cause significant impacts include terminal building construction or roadway alignments. Any induced socioeconomic impacts produced as a result of the proposed development at the San Carlos Apache Airport are expected to be positive in nature and may include increased tribal revenue, increased employment, and a stimulus to economic development in the area.

## **7.5 AIR QUALITY**

Federal Aviation Administration Order 5050.4A, "Airport Environmental Handbook", states that no air quality analysis is needed if the airport is "a general aviation airport and has less than 180,000 operations forecast annually" (Chapter 5, page 33). The aviation forecasts through the twenty year period recognized by the FAA for the San Carlos Apache Airport are well below the level defined in the FAA Order (See Table IV-1). Therefore, no air quality analysis is required for the proposed development.

Construction emissions, specifically dust, will not be a long-term factor. These emissions are described in the "Construction Impacts" section of the Environmental Assessment. All necessary permits will be obtained before construction begins, and all approved construction projects will conform to the FAA Advisory Circular (AC) 15/5370-10A, "Standards for Specifying the Construction of Airports". Except for dust during construction, the proposed development will not create a significant impact on air quality.

The 1982 Airport Act requires that Airport Improvement Program applications for projects involving airport location, runway location, or a major runway extension shall not be approved unless the governor of the state certifies that there is "reasonable assurance" that the project will be located, designed, constructed, and operated in compliance with applicable air quality standards. This certification will be sought after completion of the final Environmental Assessment.

## **7.6 WATER QUALITY**

The principal hydrologic impacts of the proposed development would be the relocation of a tributary drainage channel of the Gilson Wash and the temporary creation of unstable soils that could be eroded. This condition can be minimized

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by prompt revegetation and maintenance. Other potential pollution could come from petroleum products spilled on the surface and carried to nearby waterways. However, this potential can be controlled with prompt cleanup of spills, plus a well-designed, vegetated drainage system.

The proposed runway extension construction will increase runoff in the surrounding area. However, best management practices will be used to mitigate the flow of runoff so that any impacts to water resources will be minimal. The design of the relocated channel will account for the increased runoff. These practices will mitigate the impacts associated with the proposed project to area drainage channels and to the water quality in general.

The new channel will be excavated along the southern edge of the proposed runway to a point near the existing channel. The excavation will then continue through the existing banks to allow rerouting of the water flow. Once the channel excavation is complete, work will begin for the needed fill on which the runway extension will be constructed.

The existing straight stretch of channel allows sufficiently high stream velocities that undercutting of the banks have and will likely continue in the future. A meandering pattern implemented in the design of the new channel will aid in the control of the flow velocity, and recent technology in channel slope protection and bank stabilization would allow further erosion control. The San Carlos Apache Tribe would prepare channel design plans for review and approval by the agencies having jurisdiction as part of the U.S. Army Corps of Engineers Section 404 Permit process prior to any construction of the runway relocation and extension project. Further discussion of the Section 404 Permit process is provided in Section 7.11. Also, a water quality certificate for this project will be obtained from the Arizona Department of Environmental Quality, Water Quality division, pursuant to FAA Order 5050.4A. This certification will be sought after completion of the final Environmental Assessment.

## **7.7 DEPARTMENT OF TRANSPORTATION ACT, SECTION 4(f)**

Section 4(f) provides that the Secretary shall not approve any program or project that requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of National, State, or Local significance or land from an historic site of National, State or Local significance, as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative to the use of such land, and such project includes all possible planning to minimize harm. As discussed under the previous Section 7.6, the San Carlos Apache Tribe would prepare channel design plans for review and approval by the agencies having jurisdiction as part of the Corps 404 permit process prior to any construction on the runway relocation and extension projects.

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The land needed for the runway extension and channel restoration does not contain any publicly owned land as categorized under DOT Section 4(f). Therefore, no impacts to Section 4(f) lands will be associated with the proposed project.

## **7.8 HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES**

The National Historic Preservation Act of 1966 requires that an initial review must be made in order to determine if any properties in, or eligible for inclusion in the National Register of Historic Places are within the area of proposed action. The Arizona State Historical Society and San Carlos Apache Tribal Historic and Cultural Preservation Office reviewed preliminary information on the proposed action for the existing airport site. The State Historical Society had no record of historical or cultural resources being located in the area. A cultural resource survey was performed by the San Carlos Apache Tribal Archaeologist on March 4 and 5, 1997 on the acreage to be affected by the proposed development. Consultations were also held with Tribal Elders on the cultural value of the land in the project area. A copy of the results of this survey are included in Appendix C of the Environmental Assessment report.

The survey shows that no cultural resources were found. Therefore, no significant impacts to cultural resources are expected with the proposed development.

Should cultural remnants be found during the channel relocation, runway relocation, or runway/taxiway extension, work will be temporarily suspended to allow for the evaluation and disposition of such resources, in accordance with the National Historic Preservation Act and the Archaeological and Historic Preservation Act of 1974.

## **7.9 BIOTIC COMMUNITIES**

This category concerns potential impacts to existing wildlife habitat. The significance of the impacts in this category is quantified by examining both the area of land to be altered or removed and its relationship to surrounding habitat. To assess the impact in this category, a biological assessment field visit was performed on April 21, 1997. The scientists conducting the field visit included Amanda Moors, Tribal Wildlife Biologist, and Seth Pilsk, Tribal Botanist. A copy of the Biological Assessment report is included in Appendix D of the Environmental Assessment report. The following text addresses the topics covered in the biological assessment.

### **7.9.1 Vegetation and Wetland Resources**

The biological assessment identified 26 species of grasses, trees, shrubs, and forbs located within the project area. Findings of the biological assessment indicate that the area has been highly disturbed by modern human activities and that vegetation has adapted to the disturbance. Plants

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in the proposed project area are expected to adapt to the proposed development.

The greatest impact will be caused by the relocation of the drainage channel. Two primary vegetation types are present within the affected portion of the drainage wash channel: mesquite and burrobrush. It is recommended that mature mesquite specimens be relocated/transplanted to areas along the new channel as a measure to mitigate impacts to vegetation and to promote revegetation along the new channel.

Plants and animals are expected to adapt to the proposed development as well. Potential direct impacts to vegetation and wetland resources due to the airport expansion include conversions of natural vegetation and cover types to the fill area and to the constructed channel area. Indirect impacts listed are alteration of the area hydrology, alteration of drainage flow patterns, potential elimination of wetland hydrology downstream, and potential elimination of vegetation due to accidental excavation and/or placement of fill material.

#### **7.9.2 Wildlife Resources**

The biological assessment lists several wildlife species as common to the project area, none of which are listed or proposed species on the threatened or endangered species list. Common animals that inhabit the site include the Gray Fox, Coyote, Cottontail Rabbit, Black-tailed Jackrabbit, Black-throat Sparrow, Verdin, European Starling, House Finch, Common Raven, Western Meadowlark, Loggerhead Shrike, Red-tailed Hawk, and Lark Sparrow. The vegetation and cover types also identified by the biologists are reported to represent habitat for these wildlife species.

Direct impacts to wildlife are described in the biological assessment as disturbances to habitat. The area has previously been highly disturbed by modern human activities. Animals have adapted to the disturbances, and although some insects, reptiles, and possibly other wildlife may be impacted as a result of the proposed construction, animals in the area are expected to adapt to the disturbance of the proposed development.

#### **7.9.4 Summary**

Primary direct impacts to biological resources as a result of the proposed runway/taxiway extension include the discharge of fill material and excavation of approximately 107 total acres. The drainage channel relocation is included in the above stated area.

The San Carlos Apache Tribe would complete a plan for relocating mature mesquite specimens and other critical species to the new channel. Plans for the vegetation, and channel construction would be prepared for review and

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approval by the agencies having jurisdiction prior to initiation of construction for the runway relocation and runway/taxiway extension.

## **7.10 ENDANGERED AND THREATENED SPECIES**

Information on threatened and endangered species was initially solicited from the U.S. Fish and Wildlife Service and the Arizona Fish and Game Department (See Appendix A, Agency Coordination Letters). The U.S. Fish and Wildlife Service responded with a listing of 12 species as threatened and endangered for Gila County.

A biological assessment was conducted on April 21, 1997, to assess the species within the project area. A copy of the biological assessment is included in Appendix D of the Environmental Assessment report. None of the listed species, or suitable habitat for these species, were encountered during the survey of the proposed project area.

## **7.11 WETLANDS**

Wetlands are defined in Executive Order 11990, Protection of Wetlands, as "those areas that are inundated by surface or ground water with a frequency sufficient to support, and under normal circumstances does or would support, a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, and natural ponds.

Information on wetlands within the project area was solicited from the U.S Army Corps of Engineers (See appendix A of the Environmental Assessment report). The Corps of Engineers responded with a finding of a potential impact to the Gilson Wash. The Corps did not indicate the presence of any wetlands in the project area.

The Gilson Wash, and its tributary channel situated along the southern edge of Runway 9/27 are considered jurisdictional waters of the United States. The proposed development includes relocating the tributary channel approximately 100 feet to the south and placing fill material in the existing channel. Section 404 of the Clean Water Act requires a permit for the discharge of dredged or fill material into the "waters of the United States."

A pre-application consultation meeting was held on May 5, 1997, to discuss the proposed airport development and channel relocation. Those present during the meeting were Amanda Moors, San Carlos Apache Tribal Biologist, Ron Fowler, Corps of Engineers, and a representative of Armstrong Consultants, preparer of this Environmental Assessment.

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Because of the impact to jurisdictional waters from the proposed airport development, the San Carlos Apache Tribe will prepare and submit an application for a Section 404 Permit. Recommendations by the Corps of Engineers and Tribal Biologist to minimize the impacts associated with the channel relocation include increasing the meandering pattern of the new channel design to control the flow velocity and to implement bank stabilization and slope protection as required to further control erosion. Revegetation of the new channel should include as a minimum relocating mature mesquite specimens to the new channel. The tributary channel discussed above was previously relocated when the existing runway was constructed in the early 1970s with no revegetation efforts accomplished at that time. The vegetation along the channel has sufficiently recovered and established itself along the banks of the channel since its initial relocation. The same results are anticipated with the proposed channel relocation.

## 7.12 FLOODPLAINS

Floodplains are defined by Executive Order 11988, Floodplain Management, as the lowland and relatively flat areas adjoining coastal waters . . . including at a minimum, that area subject to a one percent or greater chance of flooding in any given year . . . ", that is, an area which would be inundated by a 100-year flood. If a proposed action involves a 100 year floodplain, mitigating measures must be investigated in order to avoid significant changes to the drainage system.

Flood zones as defined in the Flood Insurance Rate Map (FIRM) are listed below:

- **A** Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
- **AO** Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
- **AH** Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
- **A1-A30** Areas of 100-year flood; base flood elevations and flood hazard factors determined.
- **A99** Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
- **B** Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood.
- **C** Areas of minimum flooding.
- **D** Areas of undetermined, but possible, flood hazards.

As described in FAA Order 5050.4A, Airport Environmental Handbook, an airport development project such as the proposed runway/taxiway extension and proposed channel relocation would be a significant encroachment of the 100-year floodplain if it will involve any of the following:

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- A considerable probability of loss of human life;
  - Likely future damage associated with the encroachment that could be substantial in cost or extent, including the interruption of service on or loss of a vital transportation facility;
  - A notable adverse impact on natural and beneficial floodplain values.

The San Carlos Apache Reservation and Tonto National Forest are within Zone D as delineated on the Flood Insurance Rate Map (FIRM) for Gila County, Arizona (effective date September 27, 1985).

Heavy, sudden rainfalls occur in the area during the monsoon season, which typically occurs in July. The local Fixed Base Operator, Mace Aviation, reports regular flooding of the airport prior to 1972. However, in 1972 the drainage wash channel to the south of the airport was relocated in conjunction with a runway and taxiway extension project. The channel, which feeds into the Gilson Wash, was deepened and widened at that time. The airport has not flooded since the relocation of this drainage channel.

The proposed airport development will ultimately increase the amount of paved area on the airport by approximately 60,000 square yards, which will in turn increase the volume of surface water runoff. The proposed development requires another relocation of the drainage channel due to the proximity of the existing channel to the proposed runway and runway/taxiway extension. The relocated channel will be designed to accommodate the increased surface water runoff due to the increased pavement area on the airport, and will accommodate the flow volumes associated with its current drainage basin. Appropriate measures will be taken to control flow velocity and erosion within the channel.

The proposed airport development and relocation of the drainage channel is not expected to increase the potential for flooding within the area. During the Section 404 permit process designs for the runway, taxiway, and channel will be reviewed by the U.S. Army Corps of Engineers and other jurisdictional agencies to ensure drainage requirements are met. Therefore, the proposed development will not have a significant impact on floodplains.

### **7.13 COASTAL ZONE MANAGEMENT PROGRAM**

There are no coastal zones associated with the proposed San Carlos Apache Airport. Therefore, compliance with the Coastal Zone Management Act of 1972 is not a factor in this Assessment.

### **7.14 COASTAL BARRIERS**

There are no coastal barriers associated with the proposed San Carlos Apache Airport. Therefore, compliance with the Coastal Barriers Resources Act of 1982 is not a factor in this Environmental Assessment.

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## **7.15 WILD AND SCENIC RIVERS**

The Wild and Scenic Rivers Act describes those river areas eligible to be included in a system afforded protection under the Act as free flowing and possessing "...outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values." The Department of Interior maintains a National Inventory of river segments which appear to qualify for inclusion in the National Wild and Scenic River system.

No potential wild or scenic rivers were identified during a review of the project area, nor did the Department of Interior identify any Wild or Scenic Rivers in the vicinity of the airport; therefore, the proposed development will not have an impact on any Wild and Scenic river and no further analysis is required.

## **7.16 PRIME AND UNIQUE FARMLAND**

The Farmland Protection Policy Act (FPPA) authorizes the Department of Agriculture to develop criteria for identifying the effects of Federal programs upon the conversion of farmland to uses other than agriculture. Under this act, the conversion of "prime or unique" farmland would be considered a significant impact.

The land to be affected by the proposed development is currently undeveloped open area and is used to some extent for cattle grazing. This area is not farmed, and therefore cannot be categorized as either prime or unique farmland. The proposed development would not create an economic impact to the agricultural base of the area, and would not cause a significant impact to prime and unique farmland.

## **7.17 ENERGY SUPPLY AND NATURAL RESOURCES**

The proposed development action is not expected to significantly increase the energy requirements at the airport including aircraft and ground vehicle fuel consumption. The construction and operation of the new airport facilities will not use any natural resources in short supply. Fill material for the construction of the new runway and taxiway extension will be obtained from the excavation of the relocated drainage channel.

## **7.18 LIGHT EMISSIONS**

The proposed Runway 9/27 and parallel taxiway is planned to be lighted. The runway edge lighting is used to distinguish the usable portion of the runway during darkness or poor visibility conditions. There are no homesites in the vicinity of the airport that would be significantly impacted by the approach aids or the runway lights. If specific complaints are received from homeowners, possible mitigation measures include the installation of baffling or shielding of the lights to reduce the visual impacts.

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## 7.19 SOLID WASTE IMPACT

Airport development actions which relate only to construction or expansion of runways, taxiways, and related facilities do not normally include any direct relationship to solid waste collection, control or disposal. The nature of the proposed developments meets this criteria, and no significant impacts are anticipated. Temporary impacts associated with construction operations are discussed in Section 7.20 below.

## 7.20 CONSTRUCTION IMPACTS

Construction operations for the proposed development will cause specific impacts resulting solely from and limited exclusively to the construction period. Construction impacts are distinct in that they are temporary in duration, and the degree of adverse impacts decreases as work is concluded. The following construction impacts can be expected from the proposed channel relocation, runway relocation, and runway/taxiway extension at the San Carlos Apache Airport:

- A slight increase in particulate and gaseous air pollution levels as a result of dust generated by construction activity and by vehicle emissions from equipment and worker's automobiles.
- Increases in solid and sanitary wastes from the workers at the site.
- Traffic volumes which would increase in the airport vicinity due to construction activity (workers arriving and departing, delivery of materials, etc.)
- Slight increase in noise levels at the airport during operation of heavy equipment.
- Construction caused delays or congestion in automobile and aircraft movements.
- Temporary erosion, scarring of land surfaces and loss of vegetation in areas which are excavated or otherwise disturbed to carry out future developments.

Construction projects will comply with guidelines set forth in the FAA AC 150/5370-10A, "Standards for Specifying the Construction of Airports".

## 7.21 SUMMARY

Table VII-4 presents a summary of environmental impacts for the proposed development of the San Carlos Apache Airport relative to all the specific categories investigated as part of this Environmental Assessment.

**TABLE VII-4  
SUMMARY OF ENVIRONMENTAL IMPACTS**

<b>Environmental Impact Category</b>	<b>Potential Impact</b>
Noise	No Significant Impact
Compatible Land Use	No Significant Impact
Social Impact	No Significant Impact
Induced Socioeconomic Impacts	No Significant Impact
Air Quality	No Significant Impact
Water Quality	Minor Impact**
DOT Act- Section 4(f)	No Significant Impact
Historical, Architectural, Archaeological, and Cultural Resources	No Significant Impact
Biotic Communities	Direct/Indirect Impacts** (Mitigation/Revegetation Plan)
Endangered and Threatened Species of Flora and Fauna	No Significant Impact
Jurisdictional Waters and/or Wetlands	Direct Impact (Section 404 Permit/Drainage Wash Relocation)**
Floodplains	No Significant Impact**
Coastal Zone Management	No Significant Impact
Coastal Barriers	No Significant Impact
Wild and Scenic Rivers	No Significant Impact
Farmlands	No Significant Impact
Energy Supply and Natural Resources	No Significant Impact
Light Emissions	No Significant Impact
Solid Waste Impact	No Significant Impact
Construction Impacts	No Significant Impact

*\*\*The San Carlos Apache Tribe will obtain a Section 404 Permit from the U.S. Army Corps of Engineers for the relocation of the drainage wash channel. As part of the permit process, runway, taxiway, and channel designs will be reviewed by the Corps and other jurisdictional agencies to ensure sufficient drainage requirements and erosion control are met. A mitigation plan will also be included for the revegetation of critical species within the project area and along the existing drainage channel.*